

DO NOT ENTER: /U.J./

Docket No.: 043395-0377973  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Valery M. DUBIN et al. Conf. No. : 8631

Application No.: 10/814,982 Group Art Unit: 1641

Filing Date: March 30, 2004 Examiner: Unsu Jung

Title: **SENSOR ARRAY INTEGRATED CIRCUITS**

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**AMENDMENT AFTER FINAL ACTION UNDER 37 CFR 1.116**

MS AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**INTRODUCTORY COMMENTS**

In response to the Office Action, dated May 20, 2009, finally rejecting claims 1-4, 7-16, 19-21 and 54-59 please amend the above-identified U.S. patent application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 8 of this paper.

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**AMENDMENTS TO THE CLAIMS**

Favorable reconsideration of this application, in light of the preceding amendments and following remarks, is respectfully requested.

**Listings of Claims**

1. (Currently amended) An apparatus, comprising:  

a microfluidic trench to contain a target molecule, an array addressed device including a plurality of addressable cells, each of the plurality of addressable cells including at least two electrodes, ~~the electrodes having structures and/or charge distributions similar to the target molecule and a self-assembled interlayer configured to modulate a coverage on at least one of the electrodes;~~  
an electrochemical detector;  
and a spectroscope optically coupled to the array addressed device via a waveguide total internal reflection prism, wherein the waveguide total internal reflection prism is coupled to the microfluidic trench, wherein the array addressed device is configured to detect bonding and/or lack-of-bonding of the target molecule to the array addressed device.
  
2. (Original) The apparatus of claim 1, wherein the spectroscope includes an infrared spectroscope.